



Review

# Reviewing Value Creation in Agriculture—A Conceptual Analysis and a New Framework

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Received: 27 May 2020; Accepted: 17 June 2020; Published: 19 June 2020



Abstract: Creation of business value is a major objective of any enterprise, but the way in which value is created and its consequences call for re-evaluation in response to current sustainability goals. The agricultural sector serves basic human needs, but its systems and methods for production, processing, and consumption often pose challenges to sustainable development. To address these challenges, this study consolidated value-creating factors identified in a systematic literature review into nine clusters: collaboration, communication, knowledge, production, diversification, entrepreneurism, funding, policies, and inclusiveness. These clusters were analyzed with a Triple Bottom Line framework where financial, environmental, and social dimensions are part of sustainable development. The analysis revealed that agricultural enterprises pursue business activities in a near-term perspective, with few having strategies for long-term activities such as innovativeness, knowledge acquisition, and collaboration with external stakeholders. These findings highlight the complexity in creation of sustainable business value and call for further investigation of how value is conceptualized in the agricultural sector. Re-thinking value creation in the sector should consider why value is created, for whom, the time perspective in which value is assessed, and the aspects given weight in the assessment.

**Keywords:** added value; collaboration; communication; food production; food processing; innovation; sustainable agriculture; sustainable value; Triple Bottom Line

### 1. Introduction

Value creation plays a central role for any business system and has been referred to as "the core purpose and central process of economic exchange" [1] and "a central concept in the management and organization literature" [2] (p. 180). The traditional understanding of value in a business context links suppliers, firms, and customers, defining value as customer willingness to pay minus suppliers' opportunity costs [3–5]. In this classical view, value capture through maximization of a firm's net present value is the main objective of business activity [6–8].

While creation of business value is the major objective of any firm, the way in which value is created and its consequences require re-evaluation in response to business environment challenges [9]. With the increased importance of environmental and social factors in business, the understanding of value has expanded [10]. Views on the purpose of value creation have shifted from profit maximization to satisfying the needs of a variety of stakeholders now and in future. In other words, ideas of sustainable development have entered the business world. This process has a direct influence on the conceptualization of value and calls for closer examination.

Sustainability **2020**, *12*, 5021 2 of 22

From another perspective, there is a gap in the understanding of context-related aspects of value creation. Value studies assume that value creation happens in the same manner irrespective of the context or the level of analysis, which provides an incomplete picture of value. Thus, there is a need for contextualized research where theoretical conclusions can be applied to a specific context, since the unique features of a context can have a substantial impact on the process of value creation, requiring exploration of meso-levels of analysis that lie between societal and organizational levels [2]. Context-specific studies of value are scarce to date, but can make fruitful contributions to the theoretical understanding of value.

The agricultural sector is one context that has not received the full attention of management research [11], despite its strategic importance worldwide. Agriculture plays a significant role in global and regional development, with the well-being and even survival of many individuals and families being dependent on efficient functioning of agricultural business systems. Therefore, exploration of value-creating activities relevant to the agricultural sector is of urgent need.

Motivated by these issues, the aim of this study was to review the conceptualization of value in agriculture and suggest a new conceptual framework for sustainable value creation. In the first step, value-creating factors in agriculture reported in the scientific literature were identified in a systematic literature review and categorized into groups. Next, the literature review findings were combined with a sustainable development perspective to produce a new conceptual framework for value creation in the agricultural sector, based on the existing sustainable value framework [12]. Areas requiring future research were then assessed.

The rest of the paper is structured as follows: Section 2 provides an overview of the value creation concept in business studies and in sustainability and agriculture perspectives. Section 3 describes the methods used for the systematic literature review and analysis of data. Section 4 presents a descriptive and content analysis of the data, while Section 5 presents the new framework for sustainable value creation in agriculture. Section 6 contains concluding remarks and suggestions for future research.

# 2. Background

The term 'value' appears in business literature with remarkable frequency, but the definitions of the term are rather vague. In product-dominated economic theory, the distinction between exchange value and use value is at the core of value discussions [13]. Exchange value refers to the change in a product in the production process, i.e., the difference between cost and sales price, while use value is a subjective perception of the value of a product or service by a customer.

The value concept has recently attracted a new wave of interest from economics and management scholars [2,14–16]. It is described as something created along the vertical chain of suppliers, firms and buyers, and dependent on the individual characteristics of chain members [17]. In this model, value is created by each member of the chain and, at the same time, each member is interested in capturing as much value as possible. How to capture value becomes the core question for an individual member of the vertical chain, and the way to achieve it is discussed in the business strategy of every firm [17]. Customer value is taken as the balance between the beneficial attributes of a product (e.g., experience, service, brand) and the price [18].

In sum, value perceptions are defined with a narrow group of stakeholders in mind, using primary financial dimensions of value. Applications to other shareholder groups, and creation of value that addresses financial, social, and environmental dimensions are not considered.

## 2.1. Business Sustainability and Sustainable Value

Firms have practiced business sustainability for many centuries. An example from 17th century Germany describes a forest management approach that accounted for the renewable capacity of the trees [19]. A more modern perspective on business sustainability can be traced back to the 1990s and publication of the Brundtland Report, which enabled businesses to set sustainable development goals in corporate context. The recognition that financial sustainability will not ensure the long-term

Sustainability **2020**, *12*, 5021 3 of 22

prosperity of a firm made a distinction between traditional management theories and a sustainable perspective on management [20,21].

The Triple Bottom Line (TBL) perspective on value creation integrates economic, environmental, and social dimensions of sustainability, and facilitates understanding of their interrelations in multiple ways [10]. TBL is currently perceived as a necessary element of strategy for any firm that aims at integrating sustainability in its business. More recent accounts of value creation present the notion of a broader stakeholder analysis where the business is a part of "creating shared value" [22].

While there is a general agreement that profitability is not a sufficient condition for long-term business success, business sustainability remains challenging. In this study, the assumption was made that firms can work to satisfy all aspects of TBL. Sustainable value implies integration of environmental, social, and financial goals into business, together with multi-stakeholder needs and long-term planning [23].

Sustainable value framework [12] is an instrument that allows value activities to be classified with the purpose of creating sustainable value. It comprises a framework that consists of four segments located along a horizontal axis "Internal-External" and a vertical axis "Today-Tomorrow" [12] (Figure 1).

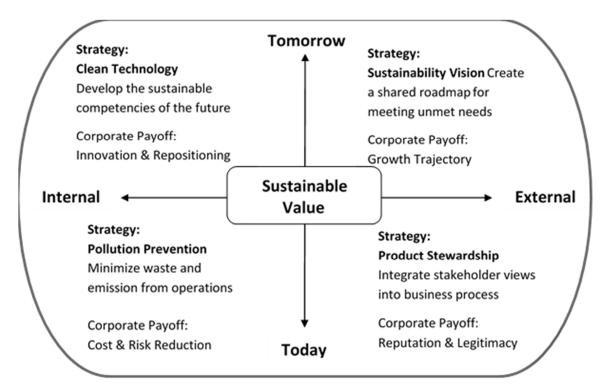


Figure 1. Sustainable value framework adapted from Hart and Milstein [12].

The framework assumes that addressing sustainability challenges is the way to achieve profitability in business while not compromising sustainability goals. By integrating activities that target pollution prevention, product stewardship, sustainability vision, and clean technology into business strategy, companies can reduce risk, improve their reputation, hasten innovations, and focus on qualitative development. In the present study, the sustainable value framework was applied to the agricultural sector to categorize value-creating activities, explain them from the point of view of sustainable development, and suggest future directions for sustainable agriculture.

## 2.2. Value in Agricultural Business

Agricultural entrepreneurship, innovation, and rural development are all intimately tied to business value creation [24,25]. Discussions about value in the agricultural literature are mostly related

Sustainability **2020**, 12, 5021 4 of 22

to the specific term of 'value-added agriculture'. Table 1 summarizes commonly used definitions of 'value-added' in the agricultural sector.

 $\textbf{Table 1.} \ \ \textbf{Review of definitions of the value-added concept in the agricultural sector.}$ 

Author	Definition		
Amanor-Boadu [26]	Value-adding activity has to satisfy two conditions: (1) if one is rewarded for performing any activity that has traditionally been performed at another stage further down the supply chain; or (2) if one is rewarded for performing an activity that is discovered to be necessary, but has never been performed in the supply chain.		
Coltrain et al. [24]	Value-adding is economically adding value to a product by changing its current place, time, and form characteristics to characteristics more preferred in the marketplace.		
Ernst and Woods [27]	"Value-added agriculture" is a broad term encompassing many practices that increase the value of farm products. Value-added agriculture has come to describe practices as varied as agri-tourism activities that provide consumers with value from visiting a farm to large-scale processing endeavors that create mass-market retail food products from commodity crops.		
Lu and Dudensing [28]	Value-added agriculture is a portfolio of agricultural practices that enable farmers to align with consumer preferences for agricultural or food products with form, space, time, identity, and quality characteristics that are not present in conventionally-produced raw agricultural commodities. Value-added agriculture can be characterized by farmers changing their position in the supply chain, creating closer or direct linkages between themselves and consumers, or changing production processes to alter or preserve certain intrinsic characteristics of their farm/ranch products.		
USDA [29]	<ul> <li>The agricultural commodity must meet one of the following five value-added methodologies:</li> <li>Has undergone a change in physical state</li> <li>Was produced in a manner that enhances the value of the agricultural commodity</li> <li>Is physically segregated in a manner that results in enhancement of the value of the agricultural commodity</li> <li>Is a source of farm-or ranch-based renewable energy, including E-85 fuel</li> <li>Is aggregated and marketed as a locally-produced agricultural food product</li> <li>Is a result of the change in physical state or the manner in which the agricultural commodity was produced, marketed, or segregated</li> <li>The customer base for the agricultural commodity is expanded. A greater portion of the revenue derived from the marketing, processing, or physical segregation of the agricultural commodity is available to the producer of the commodity.</li> </ul>		
Womach [25]	Value-added refers most generally to manufacturing processes that increase the value of primary agricultural commodities. Value-added agriculture may also refer to increasing the economic value of a commodity through particular production processes, e.g., organic produce, or through regionally-branded products that increase consumer appeal and willingness to pay a premium over similar but undifferentiated products.		

Sustainability **2020**, *12*, 5021 5 of 22

All aspects of the value-added defined in Table 1 refer to the product as the source of value creation or a producer as the beneficiary of value. In addition, value itself is examined mostly from a financial perspective. Referring to the TBL, we see a need to view value creation based on a systems perspective, taking a broader view on sustainable agriculture.

## 3. Methods

A systematic literature review was applied in a structured evaluation of published academic work. The review objectives were to systematically access and interpret the existing body of literature and suggest areas for future development of knowledge [30,31]. With the help of a literature review, knowledge gaps can be identified, contributing to theory development [32].

The term 'value' comprises numerous meanings and is used by researchers in numerous ways. Here, the interest was in a specific understanding of value in terms of business activities in the agricultural sector, and therefore, strict selection requirements were set for the initial pool of articles. The systematic literature review performed was based on a keyword search following the PRISMA-P protocol [33] to ensure a structured and comprehensive procedure. A successful search strategy requires awareness in determining the search terms and identifying relevant papers [34]. The choices made in this study in terms of search queries are described in Table 2. Databases, Thomson Reuter's Web of Science Core Collection, and Elsevier's Scopus were used to conduct the search. The search terms consisted of "value" and its derivatives, together with "agriculture" or "farming" or "horticulture". The document type was "article", language "English", and subject areas limited to business or management. The search was based on titles, abstracts, and keywords.

Table 2. Databases and terms used in the search queries in this study, and number of hits obtained.

Database	Search Query	No. of Results
Scopus	TITLE-ABS-KEY (agro* OR agri* OR farm* OR agrar* OR horti*) AND TITLE-ABS-KEY ( ( value W/2 creat* ) OR ( value W/2 captur* ) )	135
TS=(value near/2 creat*) or (value near/ Web of Science Core Collection captur*) AND TS=(agro* or agri* or farmagrar* or horti*)		61

Boolean modifier the asterisk, \*, searches for any word that begins with the stem of the word truncated by it.

The limitations of pre-defined search terms are that only articles that use the same vocabulary can be retrieved. The search terms used here were taken from the business administration literature, so articles in other disciplines that use different terms to describe the same concept would not appear in the search. By applying filters and after elimination of duplicates in the original database of 196 articles (135 from Scopus together with 61 from Web of Science), the remaining 173 articles were assessed manually by reading the title and abstract. The procedure is described in Figure 2.

Following the procedure, the original database was reduced to 121 articles, which were analyzed in depth by assessing the full text. Finally, the list was reduced by 13 articles to form the final set of 108 articles. The inclusion criterion were that an article should have any kind of agriculture or food production as the main topic. The exclusion criterion excluded articles where agriculture was not the main focus; articles not written from a business perspective; and articles not reporting added value as a result of certain activities.

Sustainability 2020, 12, 5021 6 of 22

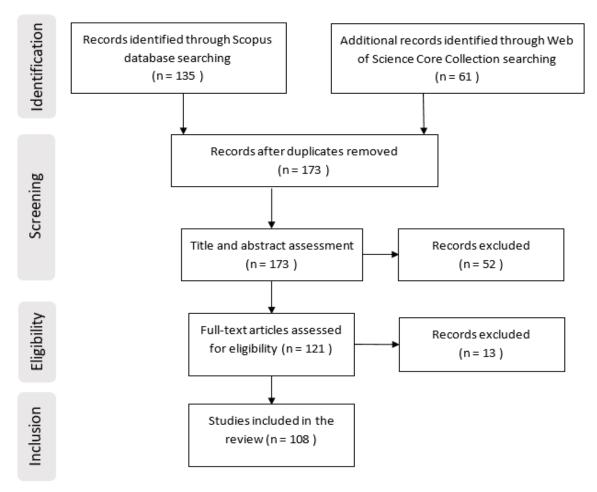


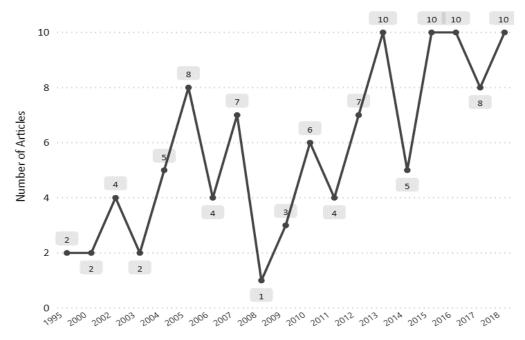
Figure 2. PRISMA 2009 flow diagram of stages followed in the systematic literature review.

In the next stage, descriptive and content analysis was performed to identify the value-creating factors in the selected papers. This is done by the process of reducing the textual data by theme identification and frequency analysis [35]. Due to the broadness of the value concept, different terms in the literature are sometimes used to represent similar value-creating activities. With the help of the content analysis, it was possible to consolidate these activities into clusters based on relevance, providing a more concise classification of results.

### 4. Results

The papers reviewed applied a variety of methodological approaches to data collection and analysis. About half involved case studies, some of which were longitudinal [36,37]. Others used survey data [38,39], and a small proportion of articles employed observation and participatory methods [40,41]. Data analysis methods included statistical methods, economic modeling, and a meta-analysis [42]. Figure 3 shows the trend in publication numbers over the period 1995–2018.

Sustainability **2020**, 12, 5021 7 of 22

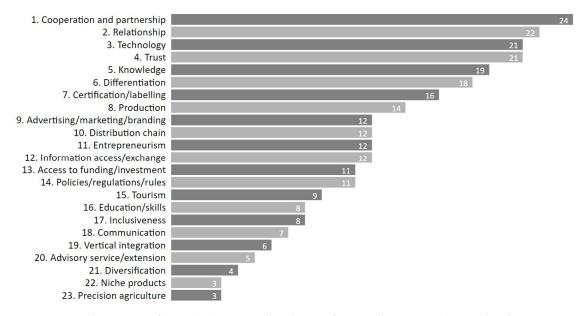


**Figure 3.** Number of publications on value creation in agriculture produced annually in the period 1995–2018.

Although the database search had an open start date, the oldest retrieved publication was dated 1995. The explanation might be that other terms to describe the concept were used earlier (e.g., "value addition" instead of "value creation"). There was a clear increase in the number of publications over time (Figure 3).

# 4.1. Content Analysis

Analysis of the articles enabled identification of 23 distinct value-creating factors mentioned in the literature (Figure 4). The order in which factors are listed in the figure corresponds to the frequency of indications in articles (i.e., factor 1 on the list was mentioned most often).



**Figure 4.** Value-creating factors (23) mentioned in the set of 108 articles reviewed. Number of mentions of factors indicated on bars.

Sustainability **2020**, 12, 5021 8 of 22

In total, 278 indications of different value-creating factors were found in the sample of 108 articles. Figure 5 presents the papers with the indication of the factors mentioned in these 108 articles.

No	Sources	Voor	Factors
	Sources Anic and Nucinovic [42]		Factors
	Anic and Nusinovic [43]		3, 8, 13, 14
	Armstrong et al. [39]		6, 9, 18
	Atănăsoaie [44]		2, 6, 10
	Austin and Leonard [45]		1, 17, 18
	Badar et al. [46]	2015	
	Baron, 2011 [47]	2011	
7	Batterink et al. [48]		1, 13, 20
	Bertazzoli et al. [49]	2011	
	Bogale et al. [51]		8, 9, 10
	Boehlje [50]	2004	,
11	Boland [52]	2003	3
	Bongiovanni and Lowenberg-		
	Deboer [53]		3, 5, 23
	Bonney et al. [54]		11, 17
	Briscoe and Ward [56]		1, 11, 21
	Bramley and Kirsten [55]	2007	
	Bryla [57]	2017	
	Campbell and Doherty [58]	2013	
18	Carriquiry and Babcock [59]	2007	4, 7
19	Che [60]	2006	9, 15, 21
20	Chen and Tang [61]	2015	12, 23
21	Chumaidiyah [62]	2017	6, 8
22	Cloesen [63]	2007	11, 15, 21
23	Cucagna and Goldsmith [64]	2018	2, 6, 8
24	Darroch et al. [65]	2002	2,6
25	Dentoni et al. [66]	2012	2, 18
26	de Carvalho and Mendes [67]	2016	8, 10
27	Declerck and Cloutier [68]	2010	3,7
28	Deselnicu et al. [42]	2013	7
29	Dey et al. [69]	2016	3, 5, 15, 16, 17, 18
30	Di Gregorio [70]	2017	6, 11, 15
31	Duffy and Fearne [71]	2004	1, 2
32	Eastwood et al. [36]	2012	2, 3, 5, 20
33	Fafchamps and Minten [72]	2002	2, 12
34	Ferraz et al. [73]	2018	4, 5, 18
35	Giannakis and Bruggeman [74]	2015	5, 13, 14
	Gloy and Akridge [75]	2000	
	Gray et al. [76]	2004	
	Goldsmith and Bender [77]		2, 6, 12
	Goldsmith and Gow [78]	2005	
	Grunert et al. [79]		2, 9, 12, 14
	Hall [80]	2005	
	Hsu et al. [81]	2013	
	Han and Chuang [82]		1, 4, 16, 17
	Handayati et al. [83]		1, 10, 18
	Hartlieb and Jones [84]	2009	
	Hastings et al. [85]		2, 4, 10
	Higgins and Laredo [40]	2006	
	Hinrichs [86]		2, 10
	Hinterhuber [87]	2002	
	Howieson et al. [88]		1, 2, 3
	Hunt et al. [89]		2, 4, 9
	Jayashankar et al., (A) [90]	2018	
	Jayashankar et al., (B) [91]	2018	
54	Jraisat [92]	2016	1, 10, 17

NI -	S	V	F
No	Sources		Factors
	Jolink and Niesten [93]		6, 7, 11
	Kaaristo [94]		11, 15
	Kastelli et al. [95]		3, 14
	Katz and Boland [96]		1, 8, 12, 22
	Kline et al. [97]		4, 6, 15, 16, 22
	Leguizamon et al. [98]		1, 2, 6
	Liang [99]		5, 11, 15
	London et al. [100]		4, 13
	Lutkemeyer Filho et al. [101]		2, 4, 20
	Marotta et al. [102]	2017	
65	Matopoulus et al. [103]	2007	1
66	McBratney et al. [104]	2005	3, 5, 23
	McBratney et al. [104] Melton and Huffman [105]	1995	
	Mishra et al. [106]	2009	8, 13, 16
	Moeen and Agarwal [107]		
	Menozzi [108]		5, 7, 12, 14
	Meissner and Komba [109]  MK Leat and Revoredo-Giha [110]		4, 6, 11, 19 1, 4, 6, 7
	Migliore et al. [111]		9, 10 3, 4, 5, 6, 8
	Micheels and Gow [112]		
	Montealegre et al. [113]	2007	
	Moulton and Zwane [114]		1,14
	Munjal et al. [115]		4, 6, 7, 15, 19
	Neganova [116]		9, 16
	Nettle et al. [37]		12, 20
	Pannekoek et al. [117]		1, 11, 18
	Pant et al. [118]		8, 16, 17
	Pascucci and Magistris [119]	2013	
	Patel [120]		1,10
	Pennings [121]	2010	
	Peterson [122]		1, 3, 5
	Polo Redondo and Cambra Fierro [123]		
	Poniman et al. [124]		1, 4, 7
	Ramesh [125]		2, 11, 17
	Ruslan et al. [126]		5, 8, 9, 13, 14
	Safri [127]		11, 17
	Shah and Ghazzawi [128]	2012	
	Semenda et al. [129]	2018	
	Sexton et al. [130]	2007	
	Shieh and Hu [131]		1, 5, 16,
	Sturaro et al. [132]		7, 8, 14,
	Sturiale and Scuderi [133]		3, 12,
97	_ ` · ·	2014	
	Starr et al. [134]		9,10
	Tampe [135]		2, 7, 19
	Tang et al. [136]		1, 2, 4
	Teklehaimanot et al. [137]		5, 12, 16
	Tencati and Zsolnai [138]		1, 4, 8
	Thilmany et al. [38]	2006	
	Thomas-Francois et al. [139]		2,11
	Tzouramani et al. [140]		6, 13, 14
	Uzea and Fulton [141]		1, 2, 9
	Woiceshyn [142]		3, 12, 13
108	Zavorotin et al. [143]	2018	13, 14

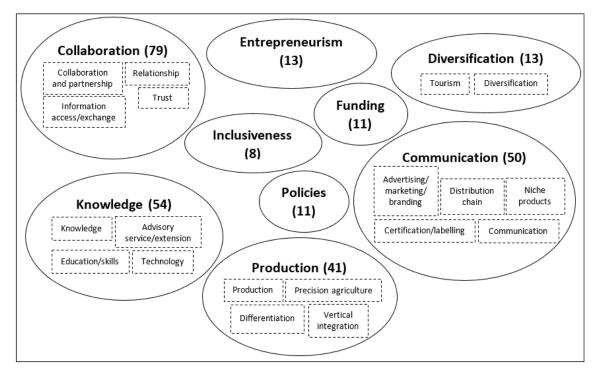
Figure 5. Papers in which value-creating factors 1–23 were mentioned [43–143].

Analysis of the frequency of mention of different terms revealed that cooperation and partnership factor occurred most often in the literature, mentioned in 24 of 108 sources, followed by relationship (22/108) and technology (21/108) (Figure 5). The least frequently mentioned factors were niche products and precision agriculture (both 3/108) (Figure 5). Frequency of mention does not necessarily reflect the

Sustainability **2020**, *12*, 5021 9 of 22

significance of a factor, since it can be affected by the time at which a factor first appears in the literature. Thus, the present frequency analysis did not reveal the importance of certain factors over others, but showed that some factors are more commonly discussed in the agricultural business community.

Some of the 23 factors refer to similar contexts or closely related concepts. To improve the accuracy of results and efficiency of analysis, the number of variables had to be reduced [144]. Therefore, the value-creating factors were analyzed based on thematic similarity and similar concepts were united into clusters. Following this, the 23 factors were consolidated into 9 clusters (Figure 6): collaboration, communication, diversification, knowledge, production, entrepreneurism, funding, inclusiveness, and policies. Although some factors were interconnected and could be assigned to several clusters, they were placed in the most relevant cluster. Each cluster is further described in Sections 4.1.1–4.1.9.



**Figure 6.** Nine clusters of value-creating factors identified in the agricultural business literature (number of mentions of component factors in brackets).

## 4.1.1. Collaboration

The collaboration cluster included all kinds of partnerships and relationships in agricultural enterprises. It also encompassed topics such as trust and information access. Collaboration occurs at all levels of the value chain, with practical examples being knowledge exchange, common use of processing, testing, and R&D facilities, etc. Collaboration also appears in the form of farmers' federations and established joint ventures. Formal organizations can act as promoters of certain trends such as encouraging organic production, certification of products or development of new sales channels, and joint purchasing of inputs. In the example of dairy cooperatives in Ireland, collaboration with outsourcing partners is used to optimize business activities [56]. Small-scale cooperatives cooperate in collective use of testing, processing, and storage facilities [85]. This allows farmers to avoid investments in higher capacity facilities. Farmers also collaborate informally on EU milk quotas by transferring quotas between cooperatives.

## 4.1.2. Diversification

According to the literature reviewed here, farmers can achieve financial sustainability in their business and increase their own well-being through diversification. The articles mentioned agriculture-

Sustainability **2020**, *12*, 5021 10 of 22

or non-agriculture-related diversification. Examples of agriculture-related diversifying activities are growing vegetables for sale by dairy farmers [56] and production of feed for sale by meat farmers. Examples of non-agriculture diversification are selling or lending land to another business, building non-agricultural facilities on own land [139], and opening (eco-) tourism on the farm [63,94]. Establishing a rural tourism venue was a commonly suggested way to diversify the agricultural business, as it can provide additional income [63], lead to the purchase of agricultural products [99], and also stimulate rural development [81] and protect environmental resources [139].

#### 4.1.3. Communication

Communication refers to the way in which a company presents itself to clients, partners, and employees. An agricultural company communicates through its marketing strategy and the identity of its products. Product identity relates to activities such as certification, labeling, and branding. Certification and labeling are closely related and certification often leads to a label on a product. The purpose of certification is to ensure the safety and traceability of agricultural products from producer to consumer, which enhances consumer confidence and trust, and enables the creation of value-creating services for a producer. One study [58] reported a link between certification and economic benefits for the producer. The motivation behind labeling has two sides, economic and idealistic [84]. Evidence suggests that customers are attracted by different claims made by labels, such as "no antibiotics", "no hormones", or "humane treatment" [38]. In one study, almost 65% of survey respondents were ready to pay a price premium for health benefits offered by health-enhancing dairy products [39]. Labeling schemes such as Geographic Indicators have led to price premiums, though the level varies for different categories of products [42].

Communication with partners along the distribution chain plays an important role for the business. The distribution chain comprises: direct (sales direct from the farm), short-distance (including farmers' markets, specialist organic stores, home delivery, restaurants), and traditional (deliveries to supermarkets or wholesalers, or through cooperatives). [44]. Direct and short-distance supply chains are associated with a positive effect on the local economy and increased trust among consumers [111]. In addition, a short distribution chain provides the possibility to obtain a price premium in niche markets [134].

# 4.1.4. Knowledge

Agricultural knowledge is embodied in multiple activities of an agricultural enterprise, including the emergence of new technologies for products or processes [80,118]. Education and the development of skills, together with knowledge transfer through advisory services, emerged as topics throughout the literature reviewed. An assessment of the economic performance of the agricultural sector in 27 EU member states demonstrated that a better educated and trained farm population achieved almost nine-fold better economic performance [74]. A written business plan, a higher number of decision-makers, and engagement in value-added agriculture were reported to have a positive effect on the financial performance of new farm businesses [106]. Decision support systems (DSS) can be used to automatize farm tasks and manage large, complex businesses in order to improve control and optimize farm performance [36]. According to the study, core competencies necessary for successful implementation of DSS are:

- Information technology skills—a farmer requires at least a basic understanding of IT
- Engagement—farmers should actively engage with the system, e.g., in order to see new opportunities that individual animal data can provide
- Knowledge exchange—information about the system should flow between users and system database

The program team approach enables communication and knowledge sharing between groups of researchers, public and private organizations, farmers, the community, extension services, policy

Sustainability **2020**, *12*, 5021 11 of 22

makers, and service groups [37]. Extension services from an innovation broker bring value for development of innovation networks. With the support of a broker, a farm gains access to knowledge at the inter-organizational level [48].

#### 4.1.5. Production

The value-creating factors incorporated in the production cluster were mentioned in 41 articles (Figure 5). They included different production techniques (e.g., precision agriculture), differentiation strategies, and a general indication of the importance of production efficiency for value creation. Creating value in production brings higher returns on investment. Labor optimization through a decrease in the number of harvesting groups and increase in the hours per machine brings a net cost reduction [40].

Precision agriculture is a way to create economic and environmental value [145]. It allows chemicals to be used more efficiently, providing cost minimization and environmental protection [53]. However, for precision agriculture to advance, it requires development of DSS [104].

The literature reviewed highlighted the importance of vertical integration of smallholders to processing firms. A study of the beef and pork industry in the USA [105] noted that top-down vertical integration is an important factor for the success of producers. Moreover, vertical integration into food processing and further down the value chain can capture a larger share of "food dollars" by agricultural enterprises [130].

## 4.1.6. Funding

Access to funding and investments is crucial for development of agricultural enterprises, as the capital intensity of the sector requires major initial financial inputs. Low-cost and safe financing sources stimulate innovativeness and increase knowledge adsorptive capacity in the sector [48]. Government support is important because of the high level of risks [126]. The competitiveness of the sector is constrained in the absence of government funding and unfavorable conditions for acquiring funding from other sources, like commercial banks. Access to working and intellectual capital depends on affordable and low-risk credit [100]. Consequently, countries that invest in their agricultural sector and create a favorable financial environment tend to have high-performing and competitive agricultural businesses [74] that are able to overcome constraints with the help of investments [100].

## 4.1.7. Policies

Policies appeared in 11 articles as a factor contributing to value creation. Policies usually have influence beyond an individual agricultural enterprise, affecting the whole sector locally or internationally. In the European context, some farmers have stayed in business thanks to the income support payments provided under the EU common agricultural policy, which also aims to improve quality of life in rural areas [74]. A study on the apple processing industry showed that government engagement in a transparent agricultural policy has had a positive effect on infrastructure, technology, and cooperative arrangements [43]. Special policies targeting Geographic Indicators (GI) can promote long-term economic success and rural development by creation of favorable conditions for GI-marked products [108]. In addition, the market orientation of agricultural producers and the whole value chain can be enhanced by corresponding regulations [79]. Aside from formal regulations, voluntary agreements provide support for policy implementation. By stimulating interest groups in the industry, the government manages risk better, and with lower costs [114].

Sustainability **2020**, *12*, 5021 12 of 22

## 4.1.8. Entrepreneurism

Entrepreneurism in the agricultural sector refers to the opportunities to "create a more efficient and effective agricultural system" [54] (p. 2) by using resources in creative ways. Large corporations often limit the choices of smaller actors in the sector. In contrast, a high level of entrepreneurism is linked to the financial success of small players, along with their ability to compete with larger enterprises [56]. Agricultural entrepreneurs also create value as mediators between the environment and customers in the area of rural tourism [94], and in the main agricultural business activities [93]. The image of local embeddedness created by entrepreneurs in relation to their business is reported to be another source of value creation [70].

## 4.1.9. Inclusiveness

Inclusiveness in the agricultural business means consideration of the interests of smallholders, large commercial business entities, communities, and society as a whole. In the literature reviewed here, inclusiveness was often studied in relation to the low-income context, aiming to create value and empower local communities and small agricultural enterprises. The presence of cooperation and partnership is reported to be a prerequisite for inclusiveness [118,131]. Creation of value can be achieved by different aspects of inclusiveness. Local embeddedness of an enterprise contributes to long-term value creation for the benefit of multiple stakeholders by lowering adaptation costs [82]. Inclusive networks of agricultural enterprises have a positive impact on business performance [92]. In the African context, inclusive supply chains led to transformation of smallholders into commercially-oriented enterprises enhancing rural development and improving food security in the region [137].

# 5. A New Framework for Sustainable Value Creation in Agriculture

The value-creating business activities identified in the agricultural sector literature review were associated in different papers with organizational aspects (collaboration, inclusiveness, funding), concept orientation (diversification), marketing (communication), macroenvironment (policies), skills (knowledge and entrepreneurism) and technology (production) (Figure 6). This section builds on existing activities to move towards sustainable value creation and to re-think it in light of long-term perspective and circularity.

## Re-thinking Value Creation

The new framework for sustainable value creation in agriculture builds on the nine clusters of value-creating factors previously identified in the agricultural business literature. To take a step further, these previously identified clusters are interpreted from a sustainability perspective. Specifically, what was earlier perceived as a one-dimensional value creating activity (e.g., production) is translated into Triple Bottom Line value where environmental and social dimensions are as important as the financial dimension. Moreover, the new framework incorporates additional concepts that specifically target the sustainability of the sector (Figure 7). The choice of the additional concepts is partly guided by Hart and Milstein [12] in combination with very recent studies [146–150] and the authors' own experience. This integration of earlier identified and new concepts aims to connect value and sustainability in agriculture.

Sustainability **2020**, *12*, 5021

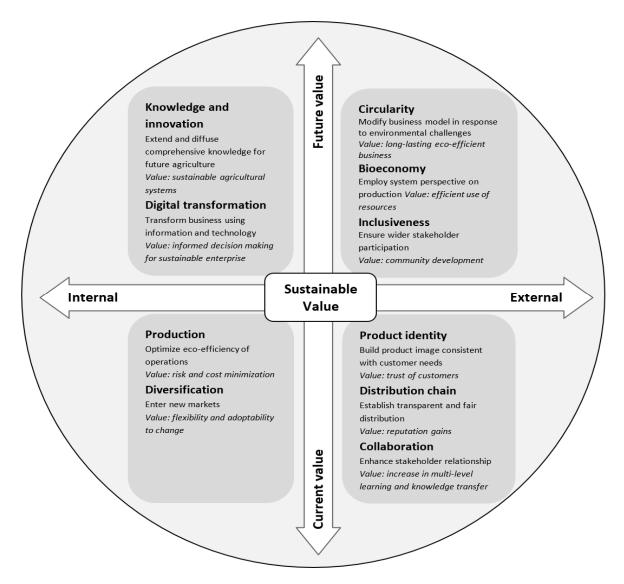


Figure 7. New framework for sustainable value creation in the agricultural sector.

In the new framework for the agricultural sector, the vertical axis "Current value—Future value" represents the connection between activities addressing value of today and perspectives for the future value. The horizontal axis "Internal—External" reflects the need to maintain internal value activities and interactions with the external surroundings simultaneously.

The lower-left segment of the framework encompasses production and diversification, both activities conducted internally inside the organization. They focus on managing current business resources allowing for cost reduction and risk minimization. These types of activities are common for the agricultural sector and a large number of scientific articles provide proof of their successful application in business. The new framework suggests extending the understanding of efficient production by including environmental and social impacts as an inherent part of efficient production. A relationship between farm value and climate change has been reported, where more land will become unsuitable for farming after the climate warms above the certain temperature [151]. Thus, accounting for environmental impact provides grounds for risk management and cost minimization in conditions of uncertainty due to global environmental challenges. The social side of risk minimization includes increased work safety and resilient livelihood of the rural population [152,153]. Therefore, a sustainable value of risk and cost minimization is not only limited to financial gains for the producer, but also comprises mitigation of environmental damage and improved social conditions. Besides,

Sustainability **2020**, *12*, 5021 14 of 22

value is intimately connected to the context in which production and consumption take place. In the eyes of the consumer, value may include environmental impact of a product, social standards of production, price, etc. Hence, by perceiving risk in a sustainable value perspective, producers can meet broader consumer interests.

In contrast to the traditional value of diversification (more opportunities for financial returns), the new framework calls for a broader understanding of diversification that aims for socioeconomic efficiency and community development. This resonates with eco-efficient production, as it results in flexible and adaptable business entities more prepared for changes arising in environmental and social domains.

In the existing sustainable value framework (Figure 1), the lower-right segment includes a product stewardship strategy, which is achieved by integrating external stakeholders' opinions. The new framework develops and contextualizes the original idea by suggesting integration of additional elements into this segment. Product identity, distribution chain, and collaboration activities take place in this segment of the framework. They are related to external stakeholders of a firm (e.g., suppliers, customers, and media) and are associated with the short-term business horizon. By working with product identity, agricultural enterprises interact with customers to recognize their needs and gain trust by creating socially and environmentally safe and reliable products. The TBL perspective on the distribution chain targets integration of transparency and fairness into all links of a chain, and promotes transformation from linear distribution to an interconnected network of partners. Fulfilment of these conditions results in value gains of a steady and solid reputation reflected in products and corporate branding. Facilitating collaboration is a new path for sustainable value creation [12]. The articles reviewed here gave examples of collaborations between agricultural enterprises with the purpose of joint use of production facilities, storage space, or conducting R&D activities. The articles did not provide evidence of explicit inclusive dialog between firms and stakeholders. Thus, although collaboration exists in the sector, it is unclear how organizational arrangements influence sustainable development. The view on collaboration expressed in the new framework points to the need for enhancing relationships with stakeholders. By consolidating collaborations, an agricultural enterprise can complement its knowledge on multiple levels and convey this knowledge further.

The top level of the new framework consists of activities that are oriented to the future value horizon. The upper-left segment in the new framework encompasses knowledge and innovations together with digital transformation. The importance of disruptive innovations in the agricultural value chain have been emphasized in the literature [154]. This corresponds to the statement that creation of value for a firm is dependent on its ability to "creatively destroy its current capabilities in favor of the innovations of tomorrow" [12]. Between the dimensions 'Internal' and 'Future value' in the new framework, knowledge and innovation activities take a prominent position and are considered not only as a source of value, but also as a prerequisite for value-creating activities in other dimensions of the framework. Problems with knowledge transfer are among the reasons for slow progress with the environmental dimension of sustainability [155]. As agricultural production interacts with the environment, knowledge of ecosystems management promises to be beneficial for the future of the sector. Efficient production and environmental balance can be achieved by having knowledge of ecosystems [156]. Further knowledge spread through education has a positive impact on innovativeness [157]. While innovativeness stimulates business performance [158], in the context of sustainable value, innovations should strive for solutions in environmental and social domains. Digital transformation is interconnected with knowledge and innovation, as it implies business transformation based on information and technology which results in informed decisions for the responsible enterprise.

Circularity, bioeconomy, and inclusiveness are value-creating activities in the upper-right segment of the new framework. Agricultural value creation has been discussed historically in terms of supply chains and value chains with linear understandings. Future needs for sustainable food systems call for new models that are circular and connect resources between production and consumption. The TBL perspective may offer grounds for understanding all three dimensions of value, which in turn calls

Sustainability **2020**, *12*, 5021 15 of 22

for new business models [159]. These perspectives replace the end-of-life concepts with restoration, assume collaboration and knowledge, and put emphasis on smart design. The new framework develops the original idea of this dimension (sustainability vision) by suggesting bioeconomy as a vision for agriculture. Bioeconomy emerged as a response to global environmental challenges. It aims at the systemic transformation of manufacturing by promoting renewable resources [160]. Bioeconomy perspective adopted by an agricultural enterprise enables the creation of long-term value for people and the planet.

Inclusiveness as a suggestion for sustainable value-creating activity points to the need for wider stakeholder participation in decision-making processes. In different parts of the world, certain groups and communities did not have a voice in activities related to agricultural recourses for decades. Such conditions do not conform to the new vision of value, and call for a change to accommodate a comprehensive representation of stakeholders.

## 6. Conclusions

This study presents a new sustainable value creation framework for the agricultural sector. This framework allows examination of an agricultural enterprise in different dimensions regarding its activities for creation of sustainable business value. Analysis of literature identified 23 factors reported to govern value creation by agricultural enterprises. These factors were aggregated into nine clusters: collaboration, knowledge, communication, production, diversification, entrepreneurism, funding, policies, and inclusiveness. Using these clusters of activities as a basis, a conceptual view on value creation in the context of the agricultural sector was developed. The overall conclusion from analysis of the literature was that the conceptualization of value in scientific articles is mostly one-dimensional, with a focus on financial benefits for enterprises, while disregarding the environmental and social aspects of TBL. The focus on financial benefits also involves a narrow stakeholder definition.

Re-thinking value creation in agricultural enterprises by considering all three aspects of TBL in balance is the way forward for future scientific work. This will mean questioning why value is created, for whom, the time perspective in which value is assessed, and the type of value given weight in the assessment. This will require the stakeholder definition to be widened to embrace the notion of shared value creation—something that other studies can explore. Future research should investigate business models that ensure collaboration, innovation, consumer inclusion, and knowledge transfer models for creating sustainable value. Longitudinal studies can be effective in investigating the change in enterprises that adopt a sustainable value paradigm. Finally, the linear perspective on value creation needs to be replaced with a circular perspective by focusing on the interaction between internal and external drivers for collaboration as part of a circular economy. Circularity offers a resource-based understanding of sustainable value creation using renewable resources and extending the use of non-renewable resources. Future research can benefit from a deeper understanding of how circularity contributes to value in a TBL perspective.

The results in this study have practical implications for managers and advisors in the agricultural sector, which corresponds to the recently published articles. For example, there is an indication that knowledge sharing allows for better managerial decisions for agricultural territory planning [161]; circular approach to agricultural residuals promise environmental benefits and financial gains [162]; and digital technology leads to enhanced value co-creation [163]. At the same time, many problems remain unsolved, such as lack of inclusiveness in global value chains [164,165] or collaboration with farmers at the bottom of the pyramid [166].

This study provides comprehensive coverage of value-creating activities at farm level reported in the literature. It also suggests different activities that can move an agricultural enterprise towards sustainability in all three aspects of TBL. By adopting the new framework, advisors can communicate knowledge on sustainable value creation for agriculture through education and farmers can integrate sustainability into their value creating strategy.

Sustainability **2020**, *12*, 5021 16 of 22

**Author Contributions:** Conceptualization, V.S., C.M.-H. and L.E.A.; methodology, V.S.; analysis of resources, V.S.; writing—original draft preparation, V.S., C.M.-H. and L.E.A.; writing—review and editing, V.S., C.M.-H. and L.E.A. All authors read and agreed on the published version of the manuscript.

Funding: The research was funded by Partnership Alnarp, SLU, Sweden.

**Acknowledgments:** The authors gratefully acknowledge financial support from SLU Partnership Alnarp and the support by the librarians at SLU Library. Thought-provoking comments by the anonymous reviewers notably contributed to the final version of this work.

**Conflicts of Interest:** The authors declare no conflict of interest. The funders had no influence on the design of the study, data collection and analysis, or on the manuscript writing and publishing.

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